

UNITED STATES DISTRICT COURT
NORTHERN DISTRICT OF ILLINOIS

UNITED STATES OF AMERICA,
STATE OF ILLINOIS,

Plaintiffs,

v.

KERR-MCGEE CHEMICAL LLC,

Defendant.

CIVIL ACTION NO. _____

VOLUME 5

OF 11

APPENDICES TO CONSENT DECREE

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IN UNITED STATES AND ILLINOIS V. KERR-MCGEE CHEMICAL LLC
(N.D. ILLINOIS)**

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Consent Decree in the matter of United States and Illinois v. Kerr-McGee Chemical LLC,
relating to the Kerr-McGee West Chicago NPL Sites.

APPENDIX K

STATEMENT OF WORK

**STATEMENT OF WORK FOR REMEDIAL DESIGN/REMEDIAL ACTION AT
THE KRESS CREEK/WEST BRANCH DuPAGE RIVER SITE AND
THE SEWAGE TREATMENT PLANT SITE, AND FOR
GROUNDWATER MONITORING AT THE REED-KEPPLER PARK SITE**

DuPage County, Illinois

March 2005

1.0 GENERAL

1.1 Purpose

The purpose of this Statement of Work (SOW) is:

- a) to set forth the requirements for implementation of the Remedial Designs and Remedial Actions set forth in the Record of Decision (ROD) signed on March 24, 2005, by USEPA Region 5 for the Kress Creek/West Branch DuPage River Site (Kress Creek Site) and in the ROD signed on September 30, 2004, by USEPA Region 5 for the Sewage Treatment Plant Site (STP Site). Both the Kress Creek Site and the STP Site are located in DuPage County, Illinois, and in this SOW are collectively referred to as the Sites; and
- b) to set forth the requirements for implementation of the groundwater monitoring set forth in the ROD signed on September 13, 2002, by USEPA Region 5 for the Reed-Keppler Park Site (RKP Site) located in West Chicago, DuPage County, Illinois.

1.2 Definitions

All terms that are defined in Section IV of the Consent Decree (CD) to which this SOW is appended as Appendix K shall maintain the same meaning in this SOW. Various additional terms defined in this SOW shall have the meanings set forth herein.

1.3 Local Communities

USEPA Region 5 recognizes that Kerr-McGee Chemical LLC (Kerr-McGee) and representatives of the Local Communities' have entered into a Consent Decree (Local Communities' Consent Decree) which has been lodged in the United States District Court for the Northern District of Illinois (*County of DuPage, Illinois; DuPage County Forest Preserve; City of West Chicago, Illinois; West Chicago Park District; and Village of Warrenville v. Kerr-McGee Chemical LLC*). The United States is not a party to that Consent Decree. However, USEPA recognizes that Kerr-McGee and the Local Communities intend

¹ The "Local Communities" are the City of West Chicago, West Chicago Park District, DuPage County, DuPage County Forest Preserve District, and the City of Warrenville.

to use the technical requirements of this SOW in the statement of work attached to the Local Communities' Consent Decree.

In the Local Communities' Consent Decree, Kerr-McGee has agreed to provide all technical plans and other draft documents required by this SOW, and any revisions to those documents, to the Local Communities for review, comment and concurrence before they are submitted to USEPA. The schedules set forth in this SOW are intended to allow sufficient time for such pre-submittal review by the Local Communities.

1.4 Format of SOW

This SOW is organized as follows:

Section 2 provides an overall description of and general remedial approach for the Kress Creek and STP Sites;

Section 3 provides a description of Remedial Actions and Performance Standards for the Kress Creek and STP Sites, along with other technical requirements;

Section 4 describes the series and sequence of technical Remedial Design/Remedial Action submittals and activities for the Kress Creek and STP Sites that Kerr-McGee shall prepare/conduct, including Common Scoping and Planning documents, Excavation Verification Plan Supplement(s) and/or Modification(s), Pre-Design Investigation Work Plan(s), Final Design/Remedial Action Work Plan(s), Remedial Action Construction Activities, Final Completion Report(s), Mitigation and Restoration, and Mitigation and Restoration Monitoring Activities;

Section 5 sets forth the requirements for groundwater monitoring at the Reed-Keppler Park Site;

Section 6 presents the schedule for major deliverables;

Section 7 provides a list of references; and

Section 8 presents a list of the Exhibits to the SOW.

2.0 OVERALL DESCRIPTION AND GENERAL APPROACH – KRESS CREEK AND STP SITES

This section of the SOW provides background information about the Sites and a general description of the remedial action approach for the Sites (Section 2.1), identifies the various reaches of the Sites that will be subject to remedial action (Section 2.2) and discusses coordination/scheduling (Section 2.3).

2.1 Background/ General Description

The remedy selected for the Kress Creek and STP Sites is based upon an extraordinarily high level of characterization activities and lengthy and detailed dialogue among Kerr-McGee, USEPA, and representatives of the Local Communities regarding Remedial Actions to be performed at the Sites. As a result of that dialogue, Kerr-McGee already has prepared a Conceptual Design Report (Blasland, Bouck & Lee, Inc. [BBL], 2002) and a Conceptual Design Report Addendum – Reach 8 (BBL, 2003). These two reports are appended to this SOW as Exhibits A and B and hereinafter are referred to as the Conceptual Design Plans'. Kerr-McGee also has prepared a Conceptual Mitigation and Restoration Design Plan (BBL, 2005) which provides a general framework for mitigating and restoring injuries to natural resources that may occur due to implementation of the selected remedies at the Sites. The Conceptual Mitigation and Restoration Design Plan (BBL, 2005) is attached to the CD as Appendix A so is not appended to this SOW.

The Remedial Actions for the Sites shall be performed consistent with the activities described in the Conceptual Design Plans and the Conceptual Mitigation and Restoration Design Plan, and in accordance with the requirements of this SOW. The deliverables to be submitted pursuant to this SOW shall include those necessary for execution of the aforementioned plans, as well as those necessary for design and implementation of the remedial measures selected by the RODs.

In accordance with the RODs for the Kress Creek and STP Sites and the CD (which includes this SOW), Kerr-McGee is obligated to excavate all soils and sediments within certain pre-defined three-dimensional envelopes. The pre-defined three-dimensional envelopes are defined in the Excavation Verification Plan appended to this SOW as Exhibit C and may be further defined in accordance with Sections 3.3.2 and 4.1.2 of this SOW. All soils and sediments within the upper and lower vertical, as well as horizontal, boundaries of these envelopes will be excavated and removed from the Sites. The Performance Standard applied is completion of these excavations to the specific elevations identified in the Excavation Verification Plan. No radiological verification will be conducted with respect to materials excavated from the pre-defined envelopes.³ Instead, completion of the excavations will be verified by using global positioning system (GPS) satellite technology to confirm that the specific elevations identified in the Excavation Verification Plan have been achieved. The Excavation Verification Plan appended to this SOW as Exhibit C consists of a complete set of Excavation Verification Plan maps and tables that

² USEPA will provide comments to Kerr-McGee on the Conceptual Design Plans and Kerr-McGee shall incorporate those comments in subsequent design submittals.

³ However, materials pre-identified as clean overburden materials, which must be excavated in order to reach the materials within the excavation envelopes, will be segregated from other excavated materials and radiologically tested.

describe the vertices of the surfaces that define the upper and lower surfaces of the excavation envelopes. The Excavation Verification Plan shall be supplemented and/or modified as necessary in accordance with Sections 3.3.2 and 4.1.2 of this SOW.

As appropriate for a remediation taking place in and adjacent to a river body, the remedial actions for the Sites will proceed sequentially from upstream to downstream and will address eight identified "reaches." This approach ensures that experience in the upper reaches will inform detailed design and implementation of remedial measures in the lower reaches. It means however, that Kerr-McGee will not be preparing a single, comprehensive Remedial Design for all eight reaches, but rather will be preparing and submitting a sequence of Remedial Design and Remedial Action Plans with reaches grouped as appropriate. In addition, while the remedial action is implemented in upstream reaches, remedial design activities may be concurrently performed in downstream reaches.

In an effort to expedite initiation of the cleanup actions required by the September 30, 2004, ROD for the STP Site, Kerr-McGee submitted certain technical documents and design submittals required by the CD and this SOW prior to the lodging of the CD. Specifically, on May 19, 2004, Kerr-McGee submitted to USEPA and the Local Communities a Pre-Design Investigation (PDI) Work Plan (see Section 4.1.3 of this SOW) for Reaches 1 through 5A and 5B. USEPA conditionally approved the PDI Work Plan for Reach 5A only on July 23, 2004, and Kerr-McGee began PDI activities in Reach 5A on August 5, 2004. Kerr-McGee then submitted to USEPA and the Local Communities a revised PDI Work Plan for Reaches 1 through 5A and 5B on September 24, 2004. USEPA conditionally approved the revised PDI Work Plan on October 26, 2004. Kerr-McGee submitted a final revised PDI Work Plan for Reaches 1 through 5A and 5B on November 5, 2004, and USEPA approved the document on November 17, 2004. Additionally, on October 7, 2004, Kerr-McGee submitted to USEPA and the Local Communities the Common Scoping and Planning Documents for the Sites (see Section 4.1.1 of this SOW) and the Final Design/Remedial Action (FD/RA) Work Plan (see Section 4.1.4 of this SOW) for certain areas within Reach 5A. USEPA conditionally approved the Common Scoping and Planning Documents and the FDRA Work Plan for portions of Reach 5A on October 27, 2004, and Kerr-McGee initiated on-site Remedial Action construction activities for those certain areas within Reach 5A on November 1, 2004.

This SOW sets forth the description of the Remedial Designs, Remedial Actions and Performance Standards including: the associated technical requirements; the required technical design and implementation submittals and deliverables as part of the Remedial Design/Remedial Action (RD/RA) activities; and the implementation schedule. All response activities associated with these RD/RA

activities will be performed under the oversight of USEPA. All submittals/deliverables required by this SOW shall be provided to USEPA and the other federal and state agencies with interests (i.e., United States Department of the Interior [DOI]; Illinois Environmental Protection Agency [IEPA]; Illinois Department of Natural Resources [IDNR]; Illinois Emergency Management Agency, Division of Nuclear Safety [IEMA/DNS]) in accordance with Section XXVI of the CD. USEPA shall coordinate compilation of review comments, if any, from the other federal and state agencies. All Federal and/or State approvals of plans and other submittals under this SOW shall be pursuant to Section XI of the CD.

2.2 Identification and Description of Areas Subject to Remedial Action

This SOW identifies Remedial Actions that Kerr-McGee shall perform to implement the RODs for the Sites. The areas subject to Remedial Action are described in detail in the Conceptual Design Plans, the Remedial Investigation (RI) Report (BBL, 2004a), and the Feasibility Study (FS) Report (BBL, 2004b). The methods Kerr-McGee used to conduct site characterization activities are described in the RI Report (BBL, 2004a), the Characterization Report (ProSource, 2004) and the Investigation Work Plan (Kerr-McGee, 1999). As indicated above, Excavation Verification Plan maps are included in Exhibit C to this SOW. A brief description of each Site and pertinent portions thereof is provided below.

Kress Creek Site

The Kress Creek Site encompasses two areas: 1) approximately 1.5 miles of Kress Creek, stretching from the storm sewer outfall located south of Roosevelt Road on the east side of the Elgin-Joliet and Eastern (EJ&E) Railway to Kress Creek's confluence with the West Branch DuPage River; and 2) approximately 5.2 miles of the West Branch DuPage River, from its confluence with Kress Creek to the McDowell Dam.

Land use along the Kress Creek Site includes residential areas, parks, three county forest preserves, and property owned by religious organizations and government agencies. The stretches of Kress Creek and the West Branch DuPage River within the Site flow under several bridges and traverse Manville Oaks Park, the Nichiren Shoshu Temple property, Roy C. Blackwell Forest Preserve, the Warrenville Cenacle, Warrenville Grove Forest Preserve, and McDowell Grove Forest Preserve.

STP Site

The STP Site is divided into two operable units (OUs): 1) the STP River OU which consists of approximately 1.2 miles of the West Branch DuPage River from the northern boundary of the STP property to the confluence of the West Branch DuPage River and Kress Creek; and 2) the STP Upland OU which consists of the West Chicago Sewage Treatment Plant, owned and operated by the City of

West Chicago and located at Illinois Routes 59 and 38, Sarana Drive, in the City of West Chicago. As described in the ROD for the STP Site, removal activities are being carried out by Kerr-McGee at the STP Upland OU pursuant to an Administrative Order on Consent dated October 16, 2003, and no further response action at that OU is required after completion of the removal action. Therefore, the STP Upland OU is not addressed in this SOW, and hereinafter any reference to the STP Site shall mean the STP River OU.

Land use along the West Branch DuPage River between the northern boundary of the STP property to the confluence with Kress Creek is predominantly recreational. The western bank adjacent to the STP facility is owned by the City of West Chicago. There are some homes and a church on the eastern side of the River between the STP and Gary's Mill Road, but only limited development exists from Gary's Mill Road to the confluence with the Creek, as the River flows through the Roy C. Blackwell Forest Preserve.

Reach Descriptions

To facilitate remediation and restoration, the Kress Creek Site and the STP Site (i.e., the Sites) are segmented into eight reaches based on physical characteristics and extent of the material subject to remediation. The eight reaches are as follows:

- Reach 1 – Outfall to May Street (Kress Creek);
- Reach 2 – May Street to Joy Road (Gunness Lake on Kress Creek);
- Reach 3 – Joy Road to Route 59 (Kress Creek);
- Reach 4 – Route 59 to Confluence (Kress Creek);
- Reach 5 – STP to Williams Road (West Branch DuPage River; the portion of River between the STP and the confluence is part of the STP Site, and the remainder is part of the Kress Creek Site);
- Reach 6 – Williams Road to Butterfield Road (West Branch DuPage River; part of the Kress Creek Site);
- Reach 7 – Butterfield Road to Warrenville Dam (West Branch DuPage River; part of the Kress Creek Site); and
- Reach 8 – Warrenville Dam to McDowell Dam (West Branch DuPage River; part of the Kress Creek Site).

The extent of required excavation in each reach has been detailed in the Excavation Verification Plan attached to this SOW as Exhibit C. Each reach is further described below.

Reach 1 is approximately **800** feet long and extends from the storm sewer outfall to the culvert at May Street within Kress Creek. The Elgin-Joliet and Eastern (EJ&E) Railway is located immediately west of the upstream portion of this reach. The land type in this reach is residential.

Reach 2 is approximately 1,000 feet long and extends along Kress Creek from the culvert at May Street to the culvert at Joy Road. This portion of the Creek also is referred to as Guinness Lake. Land type in this reach also is residential.

Reach 3 is approximately 4,100 feet long and extends along Kress Creek, from the culvert at Joy Road to the Route 59 Bridge, and encompasses the Wilson Road Bridge. Due to the length of Reach 3, it has been further divided into Reach 3A including Joy Road to Wilson Road, and Reach 3B including Wilson Road to Route 59. Land type in this reach upstream of Wilson Road is predominantly park, and downstream of Wilson Road is residential. This reach traverses Manville Oaks Park and the Nichiren Shoshu Temple property.

Reach **4** is approximately 1,000 feet long and extends along Kress Creek from the Route 59 Bridge to its confluence with the West Branch DuPage River. Land type along the western bank is residential (adjacent to the Edgewood Walk housing tract) and the eastern bank is part of the Roy C. Blackwell Forest Preserve.

Reach 5 is approximately 16,100 feet long and extends along the River from the STP, past the confluence, to Williams Road. Due to the length of Reach 5, this reach has been further divided into five sub-reaches: Reach **5A** (just upstream of the STP Outfall to *Gary's* Mill Road), Reach 5B (*Gary's* Mill Road to the confluence), Reach 5C (confluence to Mack Road), Reach 5D (Mack Road to River Oaks), and Reach 5E (River Oaks to Williams Road). Land use along the River in Reach 5 is a mixture of residential and recreational, with the western bank at the northern end of the Reach belonging to the STP. Reach **5** traverses the Roy C. Blackwell Forest Preserve as well as homes near the confluence (on Edgewood Walk), north of Mack Road, near Forest View Drive, and in the River Oaks and Emerald Green housing tracts.

Reach 6 is approximately 3,600 feet long and extends along the West Branch DuPage River from the Williams Road Bridge to the Butterfield Road Bridge. Land use in this reach is solely residential, except along the northern bank in the downstream portion of the reach that is part of the Roy C. Blackwell Forest Preserve. The majority of the property in this reach comprises the Cenacle.

Reach 7 is approximately 2,300 feet long and extends along the West Branch DuPage River from the Butterfield Road Bridge to the Warrenville Dam. This reach is comprised of Warrenville Lake and is encompassed by the Warrenville Grove Forest Preserve.

Reach 8 is approximately 2.5 miles long and extends along the West Branch DuPage River from Warrenville Dam to McDowell Dam. Immediately upstream of McDowell Dam is an area known as McDowell Lake. The lake is encompassed by the McDowell Grove Forest Preserve. The land surrounding the reach contains numerous biking and hiking trails and several fire roads. Ferry Creek flows into the lake from the north. The remainder of Reach 8 is bound by residential and commercial property.

2.3 Coordination of Remedial Activities

Remedial activities associated with the Sites will require a significant level of project scheduling, coordination, and sequencing. The remedial action and remedial design work will be performed concurrently for the various reaches. As described in Section 2.1, the initial technical RD/RA documents previously submitted by Kerr-McGee related primarily to Reaches 1 through 5A and 5B or some portion thereof. Preparation of the technical RD/RA submittals for other reaches shall be performed during or prior to remedial action in Reaches 1 through 5A and 5B. This process shall continue such that ongoing remedial action in designated reaches may be performed concurrent with design activities in the downstream reaches. The anticipated sequence of remedial activities is further discussed in Section 6.0 of this SOW.

The RD/RA activities shall include the following tasks: Preparation of Scoping and Planning Documents (including Common Scoping and Planning Documents, Excavation Verification Plan Supplements and/or Modifications, PDI Work Plan(s) and FD/RA Work Plan(s)); Remedial Action Construction Activities; Final Completion Reports; Mitigation and Restoration Activities; and Mitigation and Restoration Monitoring Activities. The scope, content, and schedule for these tasks are discussed further in Section 4.0.

3.0 DESCRIPTION OF REMEDIAL ACTIONS AND PERFORMANCE STANDARDS – KRESS CREEK AND STP SITES

This section of the SOW describes general remedial action provisions for the Sites (Section 3.1) and briefly discusses Applicable or Relevant and Appropriate Requirements (ARARs, Section 3.2). Section

3.3 discusses the remediation of Reaches 1 through 8 and sets forth the Performance Standards for the Sites.

3.1 General Remedial Action Provisions

Kerr-McGee shall design, construct, operate, monitor, and maintain the Remedial Actions at the Sites in compliance with all provisions of the RODs, the CD and this SOW (including all technical attachments and submittals) and in compliance with the Excavation Verification Plan attached hereto as Exhibit C and the schedule identified in this SOW. Kerr-McGee shall achieve and maintain all Performance Standards including cleanup standards, standards of control, quality criteria and other substantive requirements, criteria or limitations established in the RODs and described in this SOW. Performance Standards for the Sites are described in Section 3.3.1.

Specifically, this section sets forth general requirements associated with the Remedial Actions at the Sites, including ARARs, the Performance Standards, additional characterization activities, and general descriptions of the anticipated design/implementation of remedial action for each reach of the Sites.

3.2 Applicable or Relevant and Appropriate Requirements

The ARARs for the Remedial Actions at the Sites are identified in tables contained in the RODs for the Kress Creek and STP Sites, which are attached to the CD as Appendices C and M, respectively. The ARARs are identified in Tables 13 through 15 of the Kress Creek ROD and in Tables 19 through 21 of the STP ROD.

As described in Section V of the CD, and provided for in Section 121 (e) of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) and Section 300.400(e) of the National Contingency Plan (NCP), permits will not be required for any portion of the remedial actions conducted entirely on-site. This includes work that is conducted within the areal extent of contamination or in very close proximity to the contamination and is necessary for implementation of the work.

3.3 Remediation of Reaches 1 through 8

This section of the SOW sets forth the Performance Standards and other requirements that Kerr-McGee shall comply with in carrying out the Remedial Actions at the Sites and describes the anticipated remedial approach for each reach of the Sites. The Conceptual Design Plans (appended to this SOW as Exhibits A and B) and the Conceptual Mitigation and Restoration Design Plan (attached to the CD as Appendix A) describe the conceptual remedial action and mitigation/restoration approach for the Sites. The design

plans submitted for review and approval pursuant to this SOW for remediation and restoration in each Reach shall contain more detailed engineering than is contained in the conceptual plans. It is expected that the detailed design plans and the remedial actions will be consistent with the spirit and intent of these referenced conceptual plans. The conceptual approach laid out in these referenced plans will be further developed and refined in subsequent technical design deliverables described in Section 4.1.

The Performance Standards for these Remedial Actions are set forth in Section 3.3.1. Other requirements relating to additional characterization activities in Reaches 1 through 8 are discussed in Section 3.3.2, and the anticipated remedial design/remedial action is discussed in Section 3.3.3. As indicated in Section 2, to demonstrate compliance with and to achieve the Performance Standards established for the Remedial Actions in Reaches 1 through 8, Kerr-McGee shall prepare a series of technical RD/RA deliverables for review, comment, and approval consistent with Section XI of the CD. These submittals are further described in Section 4.0 of this SOW.

3.3.1 Performance Standards for Remedial Actions

Kerr-McGee shall achieve the following Performance Standards for Remedial Actions in Reaches 1 through 8 of the Sites: (1) removal of all materials within pre-defined three-dimensional envelopes to specified elevations; and (2) restoration and mitigation activities. These performance standards are discussed in more detail below.

3.3.1.1 Removal of Material to Pre-Determined Elevations

Kerr-McGee shall remove all soils and sediments from pre-determined three-dimensional envelopes ~~as~~ shown in the Excavation Verification Plan maps included in Exhibit C in accordance with the RODs for the Sites. These pre-determined envelopes have been described and defined in the Excavation Verification Plan that is attached to this SOW ~~as~~ Exhibit C. The ~~minimum~~ boundaries of excavation contained in Exhibit C and the verification requirements and procedures described in this SOW for confirming compliance with those boundaries must be addressed in order to achieve the Performance ~~Standards~~.

As shown on the maps contained in the attached Excavation Verification Plan, the boundaries of three-dimensional surfaces representing the upper surface of the excavation envelopes and the lower surface of the excavation envelopes, together, define the minimum extent of excavation required. The vertices of the surfaces that define the upper and lower surfaces of the excavation envelopes are provided in a list of points in the attached Excavation Verification Plan. All material between the upper surfaces and the lower surfaces and within the lateral dimensions defined by the points set forth in the Excavation

Verification Plan shall be excavated and transported to the Rare Earths Facility (REF) and from there shall be shipped to Envirocare or other facility licensed to dispose of such material.

In certain very limited instances, a property owner may request that materials within the minimum excavation envelope be allowed to remain in order to save a particular tree (or trees) or major transportation infrastructure or utility. USEPA will evaluate any such instances on a case-by-case basis and, if USEPA deems appropriate⁴, it may direct Kerr-McGee to leave certain materials behind. USEPA anticipates that any such instances will be identified during the detailed design phase, prior to Kerr-McGee's submittal of the FD/RA Work Plan(s) for the reach that addresses that particular property, as Kerr-McGee discusses with each property owner the remedial activities to be conducted on their property and how the property will be restored. The Common Scoping and Planning Documents shall describe how such requests will be handled, evaluated and documented, including the procedures for notifying appropriate parties (particularly USEPA and the technical representative of the Local Communities (Local Communities' Representative)), and the FD/RA Work Plan(s) shall clearly describe any such deviations from the excavation envelope defined and described in the attached Excavation Verification Plan and/or any approved Supplements and/or Modifications to that plan.

Compliance with the excavation requirements shall be demonstrated by verifying excavation elevations at each of the specified points in the attached Excavation Verification Plan.

The points identified in the Excavation Verification Plan include the verification points for the upper and lower boundaries of excavation. Collectively, these points define the lower and upper surfaces between which all materials must be excavated. Compliance with the excavation requirements shall be demonstrated by measuring the elevation at each of these specified points, post-excavation.

For verification and compliance with the lower limits of the excavation, the measured post-excavation elevation at each point must be lower than the elevation for that point specified in the Excavation Verification Plan.

The points identified in the Excavation Verification Plan also include the upper verification points which serve to separate the material which does not need to be shipped and transported and which may be returned to the Sites (i.e., overburden) from the materials within the excavation envelopes which must be

⁴ USEPA will consider the location, depth and concentration of the materials in question and whether leaving the materials behind would be protective of human health and the environment (including consideration of the affected property owner and other nearby and downstream property owners). A formal risk assessment will not be required.

excavated and shipped to the REF for direct shipment to Envirocare or other licensed facility. Where the materials in the excavation envelopes are covered by overburden, excavation shall proceed to the specified upper surface elevations of the points in the Excavation Verification Plan. Compliance shall be achieved when the surface elevation after excavation of the overburden is no more than six (6) inches above and no more than three (3) inches below the upper elevation specified in the Excavation Verification Plan at the corresponding point. These overburden materials shall be segregated from the materials that are in the excavation envelopes. Subject to approval by USEPA based on confirmation testing results, these overburden materials may be returned to the Sites as fill. Removed overburden materials shall not be placed in the backwater pools formed by the dams in Reaches 7 and 8.

Kerr-McGee shall submit information identifying all points verified during each thirty (30) day period after excavation has begun with the monthly progress reports required by this SOW and Paragraph 35 of the CD.

When Kerr-McGee believes that excavation will be completed in any given area of the Sites, it shall notify USEPA, IEMA/DNS and the Local Communities' Representative. Such advance notification will provide those parties with an opportunity to be present to (1) observe Kerr-McGee's depth and extent measurements and (2) make independent measurements to confirm that the required extent of excavation has been completed. After providing such advance notification to USEPA, IEMA/DNS and the Local Communities and when Kerr-McGee believes it has completed excavation work in any given area of the Sites, Kerr-McGee shall make depth and extent measurements to confirm that the required extent of excavation has been completed. Kerr-McGee shall notify USEPA, IEMA/DNS and the Local Communities' Representative of the results of its depth and extent measurements. If the required depths and extent of excavation have been completed and Kerr-McGee has notified USEPA, IEMA/DNS and the Local Communities' Representative as described above, Kerr-McGee may begin restoration of the verified area. If the required depth and extent have not been completed, Kerr-McGee shall complete any required additional excavation and have such completion verified in accordance with the procedures stated above.

3.3.1.2 Restoration and Mitigation Activities

Kerr-McGee shall restore and mitigate impacted areas and perform monitoring and maintenance activities in accordance with the Conceptual Mitigation and Restoration Design Plan (BBL, 2005) and the FD/RA Work Plan(s) to be developed for the Sites.

3.3.2 Additional Characterization Activities

It is recognized that Kerr-McGee is still in the process of characterizing potential impacts in the area between the Warrenville and McDowell Grove Dams (Reach 8). Further, Kerr-McGee is also still in the process of finalizing characterization in certain areas in Reaches 1 through 7. Additionally, there are several properties at the Sites for which Kerr-McGee has not yet obtained access to conduct characterization activities. Any changes to the boundaries of the excavation envelopes required as a result of these additional/final characterization activities must be approved by USEPA and shall be incorporated into the Excavation Verification Plan as a supplement and/or modification to the Excavation Verification Plan attached hereto as Exhibit C and shall be reflected in the appropriate FD/RA Work Plan(s). Any supplements and/or modifications to the attached Excavation Verification Plan shall be submitted for review and approval in accordance with Section 4.1.2 of this SOW. All soils and sediments within the boundaries of the revised excavation envelopes identified as a result of these additional/final characterization activities shall be removed and managed in accordance with this SOW and the Conceptual Mitigation and Restoration Design Plan (BBL, 2005) in the same manner and to the same extent as materials from previously characterized areas of the Sites.

The boundaries on the Excavation Verification Plan maps included in Exhibit C were based upon the results obtained from already completed borings at the Site. To the extent any further characterization is required or conducted following lodging of the CD, such characterization shall be completed by Kerr-McGee using the same numerical and procedural approach used to characterize the Sites to date as described in the Characterization Report (ProSource, 2004) and the Investigation Work Plan (Kerr-McGee, 1999). Supplements and/or modifications to the attached Excavation Verification Plan maps reflecting this new characterization work shall be developed as described below.

Kerr-McGee performed surface gamma surveys, delineation drilling and down hole gamma logging to define the horizontal and vertical limits of materials as outlined in sections 3.0 and 4.0 of the Characterization Report (ProSource, 2004). Based on this characterization work, Kerr-McGee, USEPA and the Local Communities agreed upon three-dimensional excavation envelopes made up of top and bottom surfaces that define the vertical and horizontal boundaries of materials that, through Kerr-McGee's characterization work, were found to exceed the quantitative criterion in the Characterization Report (ProSource, 2004). All such soil and materials within these three-dimensional envelopes are so-called "targeted" materials to be excavated. These top and bottom surfaces were created by constructing a series of triangular planes. For the top surface, the triangular planes connect the points within each boring that represent the top of the targeted material. For the bottom surface, the triangular planes

connect the points within each boring that represent the bottom of the targeted material. To define the horizontal perimeter of the envelope, the bottom surface was extended laterally to points located halfway between borings containing material exceeding the quantitative criterion in the Characterization Report and borings that do not contain such material. The elevations of these outside boundary points, which are horizontal extrapolations of the bottoms of the targeted material present in the nearest impacted boring (nearest neighbor concept), define the vertical limit of excavation at each such boundary point. Because some targeted materials are covered with clean overburden, the top surface perimeter was similarly constructed except that in some cases, an island where no clean overburden exists within the interior of the excavation surface was defined by a boring or borings with zero overburden. To assure excavation accuracy, all of these boundary points as well as all interior borings serve as excavation verification points. At all excavation verification points, the required excavation elevations must be achieved by Kerr-McGee as described in Section 3.3.1.1 of this SOW.

Excavation maps will be generated for both the upper and lower verification surfaces showing excavation limits and excavation reaches. Each discrete excavation area will have a unique identifier and will show all verification points with location identification (ID) names and top or bottom excavation elevations. The top verification maps will also illustrate an overburden limit boundary generated by connecting the closest borings without overburden occurring adjacent to and along the outside margins of an area of overburden. Additionally, each designated verification point will be tabulated to include its unique ID name, XY coordinates, elevations for the top and bottom of the targeted material, nearest drill hole (for boundary points) and excavation area identifier for cross-reference purposes with accompanying excavation verification maps.

3.3.3 General Description of Anticipated Remedial Design/Remedial Action

A general description of the design and implementation of remedial action anticipated for each reach is provided in the Conceptual Design Plans, which are appended to this SOW as Exhibits A and B. The Conceptual Design Plans describe the remedial approach anticipated to be used for each individual reach, and also describe several construction-related activities common to all reaches, including, but not limited to: removal and disposal of vegetation; provisions for Site controls and access; obtaining appropriate approvals; identification and protection of utilities; implementation of erosion and sedimentation controls; survey and Site layout; establishment of health and safety protocols; environmental monitoring; verification of removal limits; and material handling techniques. The conceptual approach laid out in the Conceptual Design Plans will be further developed and refined in subsequent technical design

deliverables described in Section 4.1. As described in the Conceptual Design Plans, the anticipated remedial approach for each individual reach is as follows:

Reach 1

Excavation of materials from Reach 1 will be performed through the use of dewatering including sheetpile and a pump bypass system. Sheetpile will be placed to promote dewatering (via flow diversion and minimization of groundwater infiltration) and stability. Specifically, sheetpile will be installed around the box culvert to “box in” the flow from this outfall and provide a set up location for bypass pumping equipment, along the railroad tracks for stability, and around the entire northern portion of the removal area to enclose a deep excavation area for dewatering and prevention of slope failure. A pump bypass system will be utilized for dewatering and water transport, including multiple pumps and dewatering sumps. Excavation of approximately 9,000 cubic yards (cy) of material will proceed from upstream to downstream using an excavator. Materials within the excavation envelope will be taken to a designated staging area for further dewatering, if necessary, and subsequently to the REF for loading on rail cars for shipment to a licensed disposal facility.

Reach 2

Excavation of materials in Reach 2 will be performed through the use of dewatering including sheetpile and a pump bypass system. The bypass pumping system utilized for Reach 1 will be extended through Reach 2. Sheetpile will be placed around a deep excavation area located at the northwest corner of Gunness Lake to allow dewatering for excavation and maintenance of slope stability. Excavation of approximately 9,000 cy of material will proceed from upstream to downstream using an excavator, with materials within the excavation envelope taken to a designated staging area for further dewatering, if necessary, and subsequently to the REF for loading on rail cars for shipment to a licensed disposal facility.

Reach 3

Excavation of materials in Reach 3 will be performed through the use of dewatering including a series of seven pump bypass systems (four pump bypass systems in Reach 3A and three pump bypass systems in Reach 3B) spanning approximately 750 feet each. The pump bypass system will include earthen berms at the upstream and downstream ends to isolate the segment and multiple pumps and dewatering sumps. Excavation of approximately 8,000 cy of material will proceed from upstream to downstream using an excavator, with materials within the excavation envelope taken to a designated staging area for further

dewatering, if necessary, and subsequently to the REF for loading on rail cars for shipment to a licensed disposal facility.

Reach 4

Excavation of materials in Reach 4 will be performed through the use of dewatering, including a bypass pumping system spanning the entire reach. To set up for bypass pumping, an earthen berm will be constructed at the upstream and downstream ends of the reach. The pump bypass system will include earthen berms at the upstream and downstream ends of the reach to isolate the segment and multiple pumps and dewatering sumps. Excavation of approximately 4,000 cy of material will proceed from upstream to downstream using an excavator, with materials within the excavation envelope taken to a designated staging area for further dewatering, if necessary, and subsequently to the REF for loading on rail cars for shipment to a licensed disposal facility.

Reach 5

Excavation activities in Reach 5 will be performed using two techniques – turbidity barriers/sand bags and sheetpile. The stretch of Reach 5 from the STP outfall to Gary's Mill Road (Reach 5A; the most upstream stretch of the River portion of the STP Site) will be performed using turbidity barriers or sand bags, since the majority of the removal areas are located along the River bank. The downstream stretch of the River portion of the STP Site (Reach 5B) and the remainder of the West Branch DuPage River (Reaches 5C through 5E; i.e., Gary's Mill Road to confluence and the confluence to Williams Road) will be divided into four segments using sheetpile and a pump bypass system. This will allow excavation to be performed through the use of dewatering in each segment. The pump bypass system will include multiple pumps and dewatering sumps. Excavation of approximately 23,000 cy of material will proceed from upstream to downstream in each stretch using an excavator, with materials within the excavation materials taken to a designated staging area for further dewatering, if necessary, and subsequently to the REF for loading on rail cars for shipment to a licensed disposal facility.

Reach 6

The excavation activities in Reach 6 will utilize two different isolation and excavation technologies – turbidity barriers/sand bags and sheetpile. In the upstream part of the reach, there are several shallow bank excavation areas with minimal removal quantities and as such, these areas will be enclosed with turbidity barriers or sand bags. Due to the depth of removal, sheetpile and a sump pump for dewatering will be used during excavation of material from the north bank adjacent to the Cenacle. Removal work for the larger areas downstream of the Cenacle will also be performed through the use of dewatering,

including sheetpile. Three small sediment removal areas along the southern shoreline will be cordoned off using turbidity barriers or sand bags. Excavation of approximately 5,000 cy of material will proceed from upstream to downstream in each stretch using an excavator, with materials within the excavation envelope taken to a designated staging area for further dewatering, if necessary, and subsequently to the REF for loading on rail cars for shipment to a licensed disposal facility.

Reach 7

Excavation of materials in Reach 7 will be performed through the use of dewatering and sheetpile to divert River flow. Sheetpile installation will be configured to accommodate the hydraulics of the Warrenville Lake. Within each removal area, a series of pumps and sumps will be installed to pump the water from the targeted excavation side in preparation for removal activities and to keep the area dewatered during excavation operations. Excavation of approximately 42,000 cy of material will proceed from upstream to downstream in each stretch using an excavator, with materials within the excavation envelope taken to a designated staging area for further dewatering, if necessary, and subsequently to the REF for loading on rail cars for shipment to a licensed disposal facility.

Reach 8

Although area-specific methods for excavation of materials along the portion of Reach 8 upstream of McDowell Lake shall be determined once the ongoing investigation work in this stretch is completed, these methods will be developed using the same considerations employed for other reaches (as described above), depending on the nature of occurrence of the materials as either bank soils or stream sediments. Excavation of materials in the McDowell Lake area will be performed through the use of dewatering and sheetpile to divert River flow. Within each removal area, a series of pumps and sumps will be installed to pump the water from the targeted excavation in preparation for removal activities and to keep the area dewatered during excavation operations. Excavation of approximately 25,000 cy (excluding any potential material to be identified for the portion of Reach 8 upstream of the McDowell Lake area) will proceed from upstream to downstream in each stretch using an excavator, with materials within the excavation envelope taken to a designated staging area for further dewatering, if necessary, and subsequently to the REF for loading on rail cars for shipment to a licensed disposal facility.

4.0 REMEDIAL DESIGN AND REMEDIAL ACTION SUBMITTALS/ACTIVITIES – KRESS CREEK AND STP SITES

Kerr-McGee shall design, implement, manage, and document the Remedial Actions at the Sites pursuant to the RODs and this SOW. Kerr-McGee shall prepare a series of technical submittals for review,

comment, and approval. Collectively, these submittals shall specify the RD/RA activities necessary to achieve the Performance Standards established in the ROD and this SOW. The remedial designs shall incorporate information available from prior investigations and the pre-design activities described in Section 4.1.3.

As mentioned earlier (Section 1.3), Kerr-McGee and the Local Communities have entered into a separate agreement to which the United States is not a party. In that separate agreement, Kerr-McGee has agreed to provide all technical plans and other draft documents required by this SOW, and any revisions to those documents, to the Local Communities for review, comment, and concurrence before they are submitted to USEPA. The schedules set forth in this SOW are intended to allow sufficient time for such pre-submittal review by the Local Communities.

This section of the SOW describes the overall guidelines and tasks for the performance of RD/RA activities. The information presented in this section is general and subject to modifications and/or further development as RD/RA activities are performed. Such modifications and/or further developments shall be consistent with the Conceptual Design Plans and shall be presented in the various technical submittals submitted for review and approval pursuant to this SOW. Section 4.1 describes the various Scoping and Planning Documents that shall be submitted. Section 4.2 discusses the remedial action construction activities and inspection requirements. Section 4.3 contains provisions related to the Final Completion Reports for the Sites. Section 4.4 describes mitigation and restoration activities and Section 4.5 discusses mitigation and restoration monitoring activities at the Sites.

4.1 Scoping and Planning Documents

Kerr-McGee shall prepare various documents (referred to as Scoping and Planning Documents) to support the performance of remedial design activities, pre-design activities (i.e., field sampling), and the subsequent performance of the remedial actions at the Sites. The Scoping and Planning Documents shall include the following documents, hereby referred to as Common Scoping and Planning Documents (Section 4.1.1), that are common to all reaches of the Sites:

- Quality Assurance Project Plan/Field Sampling Plan (QAPP/FSP) (Section 4.1.1.1);
- Construction Quality Assurance Plan (CQAP) (Section 4.1.1.2);
- Health & Safety Plan (HASP) (Section 4.1.1.3); and
- Emergency Contingency Plan (Section 4.1.1.4).

The Scoping and Planning Documents also shall include the following documents that are specific to each reach or group of reaches:

- Excavation Verification Plan Supplement(s) and/or Modification(s) (Section 4.1.2);
- PDI Work Plan(s) (Section 4.1.3); and
- FD/RA Work Plan(s) (Section 4.1.4).

Adherence to the procedures and protocols presented in the above plans shall provide a level of consistency and comparability for the evaluations and response actions conducted for each reach, and shall also establish minimum requirements concerning analytical and construction quality assurance, and health and safety.

The contents of these documents are subject to modification or adjustment based on specific RD/RA activities and any Site or activity-specific considerations. If deviations to the contents of these documents are identified for a given Remedial Action, such modifications shall be presented in the technical RD/RA documentation specific to that Remedial Action and must be reviewed and approved in accordance with Section XI of the CD prior to implementation of the modifications.

Additional details specific to each component of these documents are discussed in the following sections.

4.1.1 Common Scoping and Planning Documents

The Common Scoping and Planning Documents listed above describe activities that are common to the response actions anticipated for each reach. These activities are addressed in the QAPP/FSP, CQAF, HASP, and Emergency Contingency Plan, and are described below. These documents, excepting the HASP, will be submitted to USEPA and the other federal and state agencies for review and approval consistent with Section XI of the CD. The HASP and any contractor-specific HASPs shall be submitted to USEPA for review and comment prior to commencement of work activities. Kerr-McGee's HASP shall be submitted with all the other Common Scoping and Planning Documents in accordance with the schedule in Section 6.0. All contractor-specific HASPs shall be submitted no later than 14 days prior to that contractor's commencement of work activities. Kerr-McGee shall review all components of these documents annually and submit any proposed modifications for review and approval in accordance with Section XI of the CD prior to their implementation.

4.1.1.1 Quality Assurance Project Plan/Field Sampling Plan

The QAPPFSP identifies the various procedures, protocols, and methodologies to be used by Kerr-McGee during the performance of field sampling activities associated with RD/RA activities. The QAPPFSP will focus on the general requirements of these activities, including sampling and field procedures for each media, laboratory analytical methods, handling and documentation procedures, and quality assurance/quality control (QNQC) procedures. The QAPPFSP will be developed pursuant to the requirements of Section VIII of the CD and in accordance with *USEPA Requirements for Quality Assurance Project Plans (QA/R5)* (EPA/240/B-01/003, 2001), *Guidance for Quality Assurance Project Plans (QA/G-5)* (EPA/600/R-98/018, 1998), and subsequent amendments. Details concerning the scope of a particular sampling activity (e.g., specific objectives, type, location, rationale, quantity, frequency, depths, constituents to be analyzed for) will be identified in the PDI Work Plan(s), with references provided (as appropriate) to the QAPPFSP. The procedures presented in the QAPPFSP, particularly as they relate to field investigation protocols, are intended to be general guidelines and are subject to certain modification if deemed appropriate or necessary based on Site-specific considerations with prior approval of USEPA. If additional information relevant to this document is received (e.g., updates to analytical methodologies), the QAPPFSP will be modified.

The QAPP/FSP also presents the QNQC procedures to be utilized during the Remedial Actions at the Sites. The QA/QC requirements presented in the QAPPFSP shall include the following:

- Introduction;
- Project Description;
- Project Organization and Responsibility;
- Quality Assurance Objectives for Measurement Data;
- Sampling Procedures;
- Sample Custody;
- Calibration Procedures and Frequency;
- Analytical Procedures;
- Internal Quality Control Checks;
- Data Reduction, Validation and Reporting;
- Performance and System Audits;
- Preventative Maintenance Procedures;
- Specific Routine Procedures to Assess Data Precision, Accuracy and Completeness;

- Nonconformance and Correction/Preventive Action; and
- Quality Assurance Reports to Management.

In addition to the QA/QC requirements, the QAPP/FSP also contains standard operating procedures (SOPs) for the development of data quality objectives (DQOs), the collection of environmental samples, chain-of-custody documentation, field screening activities, ambient air monitoring, field equipment decontamination, and data validation.

4.1.1.2 Construction Quality Assurance Plan

A CQAP shall be prepared to provide quality assurance (QA) guidance for Site-specific construction projects in Reaches 1 through 8. The purpose of the CQAP is to make sure that a completed Remedial Action meets or exceeds all design criteria, plans, and specifications. Addenda to the general CQAP will be prepared to address Remedial Action-specific QA information, as necessary.

Elements to be included in the CQAP are as follows:

- Introduction;
- Project Organization and Responsibility;
- Project Implementation Considerations;
- Inspection and Testing Activities; and
- Reporting.

The project implementation considerations element of the CQAP shall contain a description of certain details associated with project implementation intended to maintain the quality of work. As part of the CQAP, the design basis shall include details addressing the requirements of the following at a minimum:

- Specific measures and maintenance to limit access by unauthorized vehicles to active Site work areas from public highways (e.g., which must include, at a minimum, the installation and maintenance of a lockable cable gate);
- Control measures and inspection process for erosion and sediment barriers (silt fences are required as perimeter erosion barriers; hay bales will not be allowed, consistent with procedures in the Illinois Urban Manual), noise, and dust, including the use of visual dust as an indicator of the need for dust control measures;

- Overall site security and use of barricades/warning tape/temporary coverings, as necessary, to restrict access during remedial activities at the Sites, including those instances when work is suspended on an active excavation area during the night or weekend (which will require some form of 24-hour security);
- Verification of excavation limits and clean materials, including testing procedures for overburden and backfill materials;
- Procedure for the proper characterization and disposal (at an appropriate off-site licensed facility, as necessary) of construction materials including soil/sediments (observable man-made debris in any excavated material shall be appropriately disposed off-site), silt curtains, other filter barriers, and vegetation;
- Conduct of environmental monitoring, including among other items, establishment of standards for temporary water filtration system effluent, turbidity action levels, and location of air monitors; and
- Mitigation of the release of clean and impacted materials during remedial activities.

Where Site-specific QA design specifications have been prepared as part of the design documents, these shall be used to comply with the CQAP.

4.1.1.3 Health and Safety Plan

A HASP shall be developed by Kerr-McGee to establish **minimum** health and safety requirements and procedures for all environmental activities conducted within the Sites. The following health and safety components shall be addressed in the HASP:

- Scope of Plan;
- Safety Management;
- Personnel Responsibilities;
- Hazard Assessment;
- Communications;
- Personnel Exposure and Air Quality Monitoring;
- Personal Protective Equipment;
- Training and Medical Surveillance;
- Contamination Reduction Procedures;
- General Work Precautions;

- Sanitary Facilities;
- Fire Control Equipment;
- Confined Space Program; and
- Electrical Lockout/Tagout.

There are several limitations associated with the preparation of a single HASP intended to be applicable to multiple contractors performing various tasks. For this reason, the Common Scoping and Planning documents include two HASPs – one covering activities to be performed during PDI activities and remediation oversight and the other covering remediation contractor-specific considerations. Each contractor retained by Kerr-McGee will supplement the information presented in the existing HASP(s), as necessary. Contractor-specific HASP(s) will consider not only the general information and minimum requirements contained in the HASP, but also specific information related to the particular work area and task(s) to be performed by the contractor.

4.1.1.4 Emergency Contingency Plan

An Emergency Contingency Plan shall be prepared to respond to and minimize potential risks or hazards to human health or the environment from any accidents or unplanned events, worker injuries, unplanned, sudden or non-sudden release of hazardous waste or hazardous waste constituents to air, soil, or surface water from the Sites or other emergencies (e.g., fire and explosions). The Emergency Contingency Plan may be a component of the HASP or may be submitted as a stand-alone document.

This plan will include a list of all emergency equipment that shall be available at each Site, including fire extinguishing equipment, spill control equipment, communications and alarm systems (internal and external), and decontamination equipment. The Plan shall provide contingency measures for responding to accidents or unplanned events and injury to workers. The Emergency Contingency Plan shall be amended whenever: 1) there are changes in design, response construction activities, operation or maintenance, or other conditions occur that could materially increase the potential for releases of hazardous waste or hazardous waste constituents; 2) the plan fails in an emergency; 3) the list of emergency coordinators changes; or 4) the list of emergency equipment changes.

The plan shall also provide contingency measures for addressing potential spills and discharges from materials handling and/or transportation. It shall describe the means, methods, and facilities required to prevent contamination of soil, water, air, uncontaminated structures, equipment, or material from the discharge of wastes due to spills; provide for equipment and personnel to perform emergency measures

required to contain any spillage and to remove and properly dispose of any media that become contaminated due to spillage; and provide for equipment and personnel to perform decontamination measures that may be required to remove spillage from previously uncontaminated structures, equipment, or material.

Further, the plan shall provide measures to respond to fluctuating water levels and potential flooding effects during removal activities (e.g., overtopping of sheetpile, berms, etc.). These measures shall be implemented to mitigate mixing of clean and contaminated materials during such an event.

The plan shall also describe the organization and any agreements regarding course of action among emergency agencies, including police departments, fire departments, state and federal emergency response teams, hospitals and contractors.

4.1.2 Excavation Verification Plan Supplement(s) and/or Modification(s)

The Excavation Verification Plan attached hereto as Exhibit C consists of a set of maps and tables of the vertices of the surfaces that define the upper and lower surfaces and lateral extent of the excavation envelopes for the Sites. The excavation envelopes are based on **Kerr-McGee's** characterization data from the Sites and were designed to achieve the removal of all targeted soils and sediments from the Sites as required by the RODs. As discussed earlier in Section 3.3.1.1 of this SOW, the Excavation Verification Plan includes maps of the three-dimensional surfaces for both the upper surface and the lower surface of the excavation envelopes, and also a list of points with the specific elevations of the vertices of the upper and lower surfaces of the excavation envelopes. The horizontal boundary of the cleanup limit was derived by interpolating the distance between borings that indicate the presence of material found to exceed the quantitative criterion in the Characterization Report (ProSource 2004, Sections 3.0 and 4.0) and adjacent borings that do not indicate the presence of such material; in other words, the horizontal boundary was established halfway between (a) borings where materials were found to exceed the quantitative criterion in the Characterization Report and (b) adjacent borings where no such materials were identified. The elevation of the minimum depth of excavation at the boundary was derived from the lowest elevation of such material present in the "nearest neighbor" boring indicating such material.

No exceptions to the requirement to remove material within the three-dimensional excavation envelopes shall be granted without the approval of USEPA. Supplements and/or modifications to the Excavation Verification Plan based on the ongoing characterization activities described in Section 3.3.2 shall be

prepared, as needed, in accordance with the methods and procedures described in this Section and Section 3.3.1.1 and submitted to USEPA for review and approval.

4.1.3 Pre-Design Investigation Work Plan(s)

Kerr-McGee shall conduct PDI activities at the Sites. Such activities shall be performed to further evaluate existing Site conditions and to support the development of the reach-specific FD/RA Work Plan(s). The scope of the PDI will vary according to reach, and will consider the type and extent of information that is already available. The PDI Work Plan(s) shall propose the additional sampling and other field investigations necessary to design and implement the Remedial Action to achieve the Performance Standards discussed in this SOW, taking into account existing data, and shall include a schedule for the performance of such investigations and submittal of the FD/RA Work Plan(s).

It is anticipated that the following pre-design field investigations shall be performed

- Baseline turbidity – to establish how Kress Creek and the West Branch DuPage River respond to different flow events, so any turbidity monitoring standards (i.e., action levels) can be developed in the appropriate context during detailed design;
- Pre-design modeling – to understand how construction activities may affect the Creek/River and surrounding environment using the Full Equations (FEQ) model (will include simulations of conditions to be generated during remediation to assess any potential impacts to the surrounding environment including modeling of temporary cross-stream structures, sheetpile installation and other silt containment barriers associated with remediation; this will also include an assessment of impacts to hydraulic control structures [e.g., low bridges, culverts] encountered along the Sites);
 - Surveying – to establish cross-sections for input into the FEQ model, to develop more precise haul road and laydown area locations and construction quantities, to establish control points for remedial excavation confirmation surveys;
- Identification of utilities – to develop final sheetpile locations and excavation limits;
- Geotechnical investigations – to determine that sheetpile thickness, length and depth of penetration are adequate to support structures near deep excavation areas, and to confirm efficacy of sheetpile installation;
- Wetlands/habitat delineations – to verify/locate the boundaries of wetlands, instream habitat structures, and banks in areas impacted by remediation for use in future detailed design activities (e.g., determination of construction/excavation methodologies to be used to minimize

impacts to wetlands); will be based on requirements of the Conceptual Mitigation and Restoration Design Plan (BBL, 2005);

- Tree survey – to document the baseline conditions for developing final restoration design details, as needed; and
- Investigating potential groundwater infiltration rate - to assess manageability of groundwater infiltration during excavation, through installation and observation of seepage meters and/or piezometers.

The PDI Work Plan(s) shall include information concerning the following topics:

- Site description and pertinent Site background;
- Summary of information currently available to support RD/RA activities;
- Assessment of design and construction data needs;
- Description of pre-design investigations/studies;
- Schedule for performing pre-design activities; and
- Schedule for submitting FD/RA Work Plan(s).

The initial PDI Work Plan that Kerr-McGee previously submitted dealt with Reaches 1 through 5A and 5B. Kerr-McGee shall, as appropriate, submit subsequent PDI Work Plans so as to cover all eight reaches of the Sites. This will allow final design and construction to proceed in an appropriate, sequential manner in accordance with this SOW and the Scoping and Planning Documents.

Within 30 days after receipt of approval, pursuant to Section XI of the CD, of the PDI Work Plan(s), Kerr-McGee shall initiate performance of the obligations outlined in that Work Plan.

4.1.4 Final Design/Remedial Action Work Plan(s)

In accordance with the schedule identified in the PDI Work Plan, Kerr-McGee shall submit a Final Design/Remedial Action (FD/RA) Work Plan(s) to USEPA and other federal and state agencies for review and approval consistent with Section XI of the CD. The FD/RA Work Plan(s) shall provide for implementation of the remedial action, for achievement of the Performance Standards and for other requirements set forth in the RODs and this SOW. The initial FD/RA Work Plan that Kerr-McGee previously submitted dealt with certain areas within Reach 5A. Kerr-McGee shall, as appropriate, submit subsequent FD/RA Work Plans so as to cover all eight reaches of the Kress Creek and the STP Sites to allow final design and construction to proceed in an appropriate, sequential manner in accordance with

this SOW and the Scoping and Planning Documents. Each FD/RA Work Plan shall include the results of the PDI and more detailed plans and schedules for implementation of all design and implementation tasks identified in the SOW, as well as an updated general overall schedule for developing and submitting other required FD/RA Work Plans.

The FD/RA Work Plan(s) shall include or discuss the following:

- Site description and pertinent Site background;
- Performance Standards;
- ARARs;
- Identification of remedial team, including key personnel, roles and responsibilities, lines of authority;
- Results of the PDI;
- Detailed design of remedial action;
- Detailed design of restoration;
- Design assumptions and parameters;
- Description of implementation details concerning performance of the remedial action;
- Summary of post-remedial Site control activities;
- Specific future inspection, maintenance and management activities associated with restored areas of the Sites; and
- Schedule for implementation and submittals for other reaches, if appropriate.

The FD/RA Work Plan(s) shall include specific details for implementing or addressing the Remedial Action(s), including, but not limited to, the design requirements reflected in the following:

- Haul routes and/or any changes thereto (as approved by affected property owners, the Local Communities' Representative and any other appropriate governmental entities) and location/routes to be used for transport to the transfer station; truck transport throughout the Sites and staging areas will include provisions for keeping the roads free of tracked mud and debris (i.e., use of tarps to cover loads, decontamination/cleaning [without the use of chemicals] of construction equipment);
- Obtaining access to impacted properties for excavation, remediation, and restoration (it is understood that the various Governmental Parties will reasonably assist with obtaining such

access upon request);

- Construction of temporary access and finger roads, river crossings, and staging areas including specification of the stones, selected liners, and liner thicknesses and a discussion of the weight of anticipated construction traffic such that the liner will not be compromised (note that if changes are necessary to the construction procedures, proper notification shall be provided to the property owner, USEPA, the Local Communities' Representative and any other appropriate governmental entities);
- Installation/removal process for placement of sheetpiling (including the anticipated depth of installation and development of pertinent cross sections [e.g., adjacent to the railway embankment]), earthen berms, and silt curtains;
- Water diversion systems for diversion around the excavation areas and transport of water to the filtration system, including details on diversion system layout, pump selection and capacity, intake (so as to not suck sediments)/discharge energy dissipation, pipe selection and sizing, leak detection, and inspection provisions;
- Specific processes for addressing restoration and mitigation within the stream bed;
- Selection and specifications for silt curtains and turbidity barriers to be used during construction (which includes excavation, restoration and mitigation);
- Overall excavation procedure and sequencing including process for Creek/River banks and floodplains, consideration of removal of overburden from behind dams, decision criteria for selection of removal method, and rate of removal;
- Minimization of removal of vegetation in advance of excavation and outside the limits of excavation to the maximum extent practicable (including protection of trees that are not in the excavation areas) and overall natural resource damages and, when removal is necessary, proper characterization and disposal of this vegetation (noting that only minimal amounts of material may be chipped and spread on public properties);
- Processing of removed sediment or floodplain materials (including use of the Physical Separation Facility located at the REF for gravel, if applicable), stabilization (including techniques/methods to be utilized), or/and modifications to removed materials (including floodplain materials as necessary) for transport (to conform to the shipping and waste acceptance criteria) as necessary;
- Placement of temporary covering/backfill or partial restoration of open excavation areas prior to non-construction periods (no excavations shall be left open or incompletely backfilled during winter shutdown); and
- Work hour limitations for each reach.

The FD/RA Work Plan(s) shall include a project schedule for each major activity and for submission of deliverables. Specific implementation details will be presented including scheduling, project-specific submittals, work area security, points of contact (including the entity specifically responsible for erosion and sediment control and a trained biologist for mussel relocation), and Site-specific updates (if any) to the Common Scoping and Planning Documents (e.g., HASP, CQAP, etc.).

The FD/RA Work Plan(s) shall also include, at a minimum, dust control and air and water column monitoring plans. The dust control plan shall include specific information related to measures to be employed (based on a standard of no visual dust), criteria for implementation of these measures, and specifics on minimizing dust (i.e., mitigate tracking of dirt from trucks to local roads). The air monitoring plan shall include specific information related to the type of monitoring/analysis to be conducted, the selected locations for the air monitors and the frequency at which monitoring will be performed. The water column monitoring plan shall include specific information related to the type of monitoring analysis to be conducted, the selected locations for the monitoring and the frequency at which monitoring will be performed. To the extent that the requirements of the dust control plan, air monitoring plan and/or water column monitoring plan are not expected to change from reach to reach, Kerr-McGee may, at its option, submit any or all of these plans as additional components of the Common Scoping and Planning Documents (Section 4.1.1) instead of submitting them as part of the FD/RA Work Plan(s).

For certain areas/reaches of the Sites (particularly areas located in close proximity to residences), depending on the specific activities to be conducted during the remedial action, it may be appropriate to implement a noise monitoring plan. The FD/RA Work Plan(s) for such areas/reaches shall include a noise monitoring plan where appropriate. The noise monitoring plan shall include specific information related to the type and frequency of noise monitoring to be conducted and action levels that would trigger noise mitigation measures. To the extent that the requirements of the noise monitoring plan (if any) are not expected to change from reach to reach, Kerr-McGee may, at its option, submit it as an additional component of the Common Scoping and Planning Documents (Section 4.1.1) instead of submitting it as part of the FD/RA Work Plan(s).

4.2 Remedial Action Construction Activities

Within 30 days following receipt of required approvals of the FD/RA Work Plan(s), Kerr-McGee shall initiate implementation of the Remedial Actions as detailed in the approved final design(s) (unless the start date falls within a scheduled winter shut-down period). In addition to the performance of the Remedial Actions and related activities, the following shall be performed:

- Pre-construction meeting;
- Progress meetings;
- Progress reports;
- Unplanned activities/design modifications (if necessary);
- Post-construction inspection; and
- Pre-certification inspection.

Kerr-McGee shall schedule and hold a pre-construction meeting to be attended by USEPA, the Local Communities' Representative, and all other appropriate governmental entities prior to the start of construction for each reach or group of reaches addressed in the approved FD/RA Work Plan(s). Kerr-McGee shall prepare minutes of the preconstruction meeting and shall transmit the minutes to all attendees.

Pursuant to Section X of the CD, Kerr-McGee shall communicate the status of the response activities to USEPA, the Local Communities' Representative and other governmental entities through written monthly progress reports and other reporting mechanisms. Monthly progress reports shall be submitted by the tenth day of each month **and** shall, at a minimum, contain the information specified in Paragraph 35 of the CD. Additionally, Kerr-McGee shall schedule and hold monthly progress meetings with USEPA, the Local Communities' Representative and other appropriate governmental entities, unless a different meeting frequency is agreed to by USEPA.

In the event that Site conditions other than those anticipated are encountered and require modification to or deviation from the approved response actions, Kerr-McGee shall promptly notify USEPA, the Local Communities' Representative, and other appropriate governmental entities of the conditions, and present a plan for follow-up evaluation and design modifications, if necessary. Design modifications shall be clearly documented and shall be subject to review and approval **in** accordance with Section XI of the CD.

Within **30** days following the completion of remedial action construction activities within each reach or group of reaches (including mitigation/restoration-related construction activities), Kerr-McGee shall schedule and conduct a post-construction inspection for such reach(es) to be attended by Kerr-McGee, USEPA, the Local Communities' Representative, and all other appropriate governmental entities. The purpose of the inspection is to determine whether construction activities have been completed consistent with the approved FD/RA Work Plan(s). **Any** outstanding construction items discovered during the

inspection shall be identified and noted. Kerr-McGee shall prepare and submit to USEPA, the Local Communities' Representative, and all other appropriate governmental entities within 14 days of the inspection a post-construction inspection report documenting the inspection findings, the outstanding construction items (if any), actions required to resolve items, completion dates for these items, and a proposed date for a follow-up inspection. Completion of construction activities within a given reach is the trigger for the start of the mitigation and restoration monitoring obligations contained in the Conceptual Mitigation and Restoration Design Plan (see Section 4.5 below) for that reach.

In accordance with Paragraph 53 of the CD, within 90 days after Kerr-McGee concludes that all the remedial action and mitigation/restoration work has been completed at the Kress Creek Site and/or the STP Site, including meeting all Performance Standards and all requirements of the Conceptual Mitigation and Restoration Design Plan, Kerr-McGee shall schedule and conduct pre-certification inspection(s) to be attended by Kerr-McGee, USEPA, the Local Communities Representative and all other appropriate governmental entities. At its option, Kerr-McGee may request pre-certification inspections for a particular reach or group of reaches or for an entire Site. It is recognized that multiple pre-certification inspections may be necessary even within a single reach due to the different monitoring obligations for different types of properties. Due to these differing obligations, Kerr-McGee may, for example, meet the Performance Standards contained in the Conceptual Mitigation and Restoration Design Plan after one year for certain types of properties and after three years at other types of properties. In such an event, it is likely that Kerr-McGee and/or the governmental entities would elect to conduct a pre-certification inspection to document that the Performance Standards had been met.

4.3 Final Completion Report(s)

If, after the pre-certification inspection(s), Kerr-McGee believes that the Remedial Action and the mitigation/restoration work have been fully performed and all performance standards met, Kerr-McGee shall prepare Final Completion Report(s) for each Site for review and approval by USEPA, DOI and the State in accordance with Paragraph 53 of the CD. The Final Completion Report(s) shall include the information required by Paragraph 53 of the CD and the following information, at a **minimum**:

- Description of the response activities performed;
- Any deviations from the design submittals;
- A listing of removal quantities;
- Results of QA/QC testing performed during each remedial action;
- As-built construction drawings;

- Representative project photographs;
- Records of off-Site waste disposal; and
- A summary of mitigation and restoration monitoring activities associated with each Remedial Action.

The Final Completion Report(s) shall provide a comparison of the executed response actions with the applicable Performance Standards discussed in this SOW and the Conceptual Mitigation and Restoration Design Plan. Supporting evaluations and calculations shall be presented.

Kerr-McGee shall submit the Final Completion Report for each Site within **30** days of the last pre-certification inspection at each Site. At its option, Kerr-McGee may submit a separate Final Completion Report for each reach or combination of reaches at logical breakpoints in consideration of the construction schedule⁵. The Final Completion Report for the last reach(es) completed at a Site shall serve as documentation of the completion of the remedial action at that Site and will incorporate the Final Completion Reports for all other reaches by reference.

4.4 Mitigation and Restoration

Restoration of areas impacted by Remedial Action, construction of mitigation, and related activities at the Sites shall be restored in accordance with the applicable Performance Standards discussed in Section 3.3.1 of this SOW and the Conceptual Mitigation and Restoration Design Plan (BBL, 2005) attached to the CD as Appendix A. Where feasible, restoration of impacted areas shall be designed to restore habitats to similar characteristics and environmental functions as originally existed, while considering environmental benefits or the needs of individual landowners. Where restoration is not feasible, mitigation in accordance with the Conceptual Mitigation and Restoration Design Plan shall be performed. Requirements regarding Site restoration and mitigation for commercial/residential property, wetlands (including emergent, scrub-shrub, and forested), forest preserve, and aquatic habitat areas are contained in the Conceptual Mitigation and Restoration Design Plan (BBL, 2005). The work of streambed preparation for haul routes, relocation of macroinvertebrates, documentation of the existing streambed, and restoration of the streambed shall all be done in accordance with the Conceptual Mitigation and Restoration Design Plan (BBL, 2005) and the FD/RA Work Plan(s) to be developed for the Sites.

⁵ Although Final Completion Reports may be submitted for each reach or group of reaches, Certification of Completion pursuant to Paragraph 53.b. of the CD **will** be provided only after all **work** at a Site is completed.

Detailed restoration and mitigation activities for each portion of the Sites shall be developed based on a pre-design field investigation (see Section 4.1.3) that will further characterize Site conditions prior to development of the FD/RA Work Plan(s) and performance of the Remedial Actions at the Site. In addition, per the Conceptual Mitigation and Restoration Design Plan (BBL, 2005), opportunities will be identified for ecological enhancements and mitigation requirements will be established. This assessment will evaluate conditions such as topography, ground cover and vegetation, general soil conditions and habitat viability, and will include delineation of wetland/habitat areas. Details regarding such restoration activities will be presented in the technical RD/RA deliverables prepared for each of the Sites.

At the completion of each phase of the work the following shall be performed: any and all equipment, stakes, fencing, debris or other materials associated with the work shall be removed and properly disposed; work areas and haul and access routes shall be otherwise clean and restored; sheetpiling shall be removed (except where necessary on privately-owned property for purposes of stability), and the property shall be restored and returned to its full intended use at the earliest practicable time consistent with the successful completion of the excavation and restoration work. All such removal and cleaning activities shall be conducted, to the maximum extent practicable, without disturbance of the resources contained in the property.

4.5 Mitigation and Restoration Monitoring Activities

After implementation of Remedial Action construction activities at the Sites (including implementation of mitigation/restoration measures), Kerr-McGee shall perform mitigation and restoration monitoring activities pursuant to the applicable Performance Standards presented in Section 3.3.1 of this SOW and in the Conceptual Mitigation and Restoration Design Plan (BBL, 2005). These activities shall include the inspection, maintenance, and management (as necessary) of restored areas. Additional details regarding the specific future inspection and maintenance activities associated with each portion of the Sites shall be identified in the FD/RA Work Plan for that reach, as described in Section 4.1.4. At its option, Kerr-McGee may combine FD/RA Work Plans for more than one reach.

The time period for the monitoring obligations contained in the Conceptual Mitigation and Restoration Design Plan (BBL, 2005) shall be computed on a reach-by-reach basis and shall begin upon completion of mitigation/restoration work, including planting and seeding, for each particular reach or combination of reaches.

5.0 GROUNDWATER MONITORING AT REED-KEPPLER PARK SITE

This section sets forth the requirements for implementation of the groundwater monitoring at the RKP Site in accordance with the CD and the RKP ROD.

5.1 Groundwater Monitoring Performance Standards

Kerr-McGee shall monitor the RKP Site groundwater to ensure that future concentrations of total uranium meet the Maximum Contaminant Level (MCL) drinking water standard of 30 micrograms per liter (ug/L). Sampling shall be conducted semi-annually (twice per year) initially, and samples shall be analyzed for total uranium. Kerr-McGee shall monitor all nine existing monitoring wells at the RKP Site until it has been demonstrated that the MCL has been achieved and maintained for three consecutive sampling events in all nine wells. Kerr-McGee shall use low-flow purging and sampling procedures for the collection of the groundwater samples from the Site and shall collect (at a minimum) unfiltered samples. Kerr-McGee shall provide USEPA and the State with a minimum of two-weeks notice prior to each sampling event and shall provide split samples to USEPA and/or the State upon request.

As described in the RKP ROD, USEPA may require that the sampling frequency be increased or decreased, depending on the sampling results. However, it is anticipated that the sampling frequency will remain on a semi-annual basis unless groundwater results show unusual and unexpected results.

5.2 Groundwater Monitoring Submittals/Activities

Kerr-McGee shall plan, implement, manage and document the groundwater monitoring at the RKP Site pursuant to the RKP ROD and this SOW. Kerr-McGee shall submit technical submittals for review, comment and approval that specify the groundwater monitoring activities necessary to achieve the Performance Standards established in the ROD. The technical submittals and other activities related to the groundwater monitoring at the RKP Site consist of Scoping and Planning Documents (Section 5.2.1), Groundwater Monitoring (Section 5.2.2), Monthly Progress Reports (Section 5.2.3), Semi-Annual Reports of Groundwater Results (Section 5.2.4), and the Final Groundwater Monitoring Report (Section 5.2.5), each of which is discussed further below.

5.2.1 Scoping and Planning Documents

Kerr-McGee shall prepare the following Scoping and Planning Documents that provide details regarding the groundwater monitoring activities at the RKP Site:

- Work Plan;
- QAPPFSP;
- HASP; and
- Emergency Contingency Plan

Additional details specific to each component of these documents are discussed in the following sections.

5.2.1.1 Work Plan

The Work Plan identifies the overall scope and management strategy for performing the activities associated with the ground water monitoring at the RKP Site. The Work Plan shall document the responsibility and authority of all organizations and key personnel involved with implementing the work and shall describe in detail the equipment and procedures to be used during the work and the schedule for conducting the work. Additionally, the Work Plan shall describe the content and format of required reports describing and documenting the sampling results (Sections 5.2.4 and 5.2.5) that shall be submitted to USEPA and the State.

5.2.1.2 QAPP/FSP

The QAPPESP identifies the various procedures, protocols, and methodologies to be used by Kerr-McGee during the performance of field sampling activities associated with the groundwater monitoring at the Site. The QAPPESP will focus on the general requirements of these activities, including sampling and field procedures, laboratory analytical methods, handling and documentation procedures, and quality assurance/quality control (QNQC) procedures. The QAPPFSP will be developed pursuant to the requirements of Section VIII of the CD and in accordance with *USEPA Requirements for Quality Assurance Project Plans (QA/R5)* (EPA/240/B-01/003, 2001), *Guidance for Quality Assurance Project Plans (QA/G-5)* (EPA/600/R-98/018, 1998), and subsequent amendments.

The QAPPFSP also presents the QAIQC procedures to be utilized during the groundwater monitoring activities at the RKP Site. The QNQC requirements presented in the QAPPESP shall include the same elements described earlier in Section 4.1.1.1 of this SOW.

In addition to the QA/QC requirements, the QAPPESP also contains SOPs for the development of DQOs, the collection of environmental samples, chain-of-custody documentation, field screening activities, ambient air monitoring, field equipment decontamination, and data validation.

5.2.1.3 HASP

A HASP shall be developed by Kerr-McGee to establish minimum health and safety requirements and procedures for the groundwater monitoring activities at the RKP Site. The HASP shall include the same health and safety components described earlier in Section 4.1.1.3 of this SOW, as appropriate.

5.2.1.4 Emergency Contingency Plan

An Emergency Contingency Plan shall be prepared describing procedures to be used in the event of an accident or emergency at the Site. This Plan may be a component of the HASP or may be submitted as a stand-alone document.

5.2.2 Groundwater Monitoring

Following USEPA's approval of the Scoping and Planning Documents, Kerr-McGee shall implement the required groundwater monitoring at the RKP Site in accordance with the schedule in the approved Work Plan.

5.2.3 Monthly Progress Reports

As required by Section X of the CD, Kerr-McGee shall communicate the status of the activities related to the RKP groundwater monitoring to USEPA and other governmental entities through written monthly progress reports and other reporting mechanisms. Monthly progress reports shall be submitted by the tenth day of each month and shall, at a minimum, contain the information specified in Paragraph 35 of the CD. The monthly progress reports for the RKP Site may be combined with the monthly progress reports for the Kress Creek and STP Sites or may be submitted separately, at Kerr-McGee's option.

5.2.4 Semi-Annual Reports of Groundwater Results

Within 60 days of each semi-annual sampling event Kerr-McGee shall submit a report to USEPA and the State with the results of the groundwater sampling in accordance with the procedures in the approved Work Plan. (In the event that the groundwater sampling frequency is increased or decreased, the reports are due within 60 days of each sampling event.)

5.2.5 Final Groundwater Monitoring Report

In accordance with Paragraph 50.a. of the CD and the procedures in the approved Work Plan, after Kerr-McGee undertakes three consecutive sampling events that demonstrate that the MCL for total uranium has been achieved and maintained in all nine monitoring wells at the Site, Kerr-McGee shall submit a

written report to USEPA and the State, for approval by USEPA, requesting that the groundwater monitoring at the RKP Site be discontinued.

6.0 SUMMARY OF MAJOR DELIVERABLES/SCHEDULE

As described in Section 2.3, remedial activities associated with the Kress Creek and STP Sites will require a significant level of project scheduling, coordination, and sequencing. Remedial action and remedial design work will be performed concurrently for the various reaches. As described in Section 2.1, the initial technical RD/RA documents previously submitted by Kerr-McGee related primarily to Reaches 1 through 5A and 5B or some portion thereof. Preparation of the technical RD/RA submittals for other reaches shall be performed during or prior to remedial action in the initial reaches. This process shall continue such that ongoing remedial action in designated reaches may be performed concurrent with design activities in downstream reaches. Overall, it is anticipated that submittals for the various reaches will be sequenced as follow: Reaches 1 through 5A and 5B; Reaches 5C through 5E; Reach 6; Reach 7; and Reach 8. The anticipated schedule for construction activities for the various reaches is provided in the Conceptual Design Plans and is anticipated to require approximately 32 months, including two winter shutdowns of two months in duration. When characterization work is completed for Reach 8, additional time will be added to the schedule, if necessary.

A summary of the project schedule and reporting requirements contained in this SOW for the Kress Creek and STP Sites is presented below. The table below also summarizes the project schedule and reporting requirements for the groundwater monitoring work at the RKP Site.

PROJECT SCHEDULE AND REPORTING REQUIREMENTS		
	Submittal/Milestone	Status/Due Date
1.	Common Scoping and Planning Documents (QAPP/FSP, CQAP, HASP, Emergency Contingency Plan) (Section 4.1.1)	Submitted (October 7, 2004).
2.	Contractor-Specific HASP(s) (Section 4.1.1.3)	Initial contractor-specific HASP submitted (December 7, 2004). New contractor HASP(s) due no later than 14 days prior to start of work by that contractor.
3.	Excavation Verification Plan Supplements and/or Modifications (Section 4.1.2)	As needed.

	Submittal/Milestone	Status/Due Date
4.	Reach-Specific PDI Work Plan(s) (Section 4.1.3)	Completed for initial reaches (Reaches 1 through 5A and 5B) (May 19, September 24 and November 5, 2004). For subsequent reaches, by the earlier of (i) 7 days following Kerr-McGee's receipt of concurrence from the Local Communities; or (ii) within 90 days following initiation of construction activities in the previous reach
5.	Implement Approved PDI Work Plan(s) (Section 4.1.3)	Within 30 days after Kerr-McGee's receipt of approval of PDI Work Plan(s)
6.	Reach-Specific FD/RA Work Plan(s) (Section 4.1.4)	Completed for initial reach (portion of Reach 5A) (October 7, 2004). For subsequent reaches, by the earlier of (i) 7 days following Kerr-McGee's receipt of concurrence from the Local Communities; or (ii) within 120 days following completion of PDI activities for the subject reach(es).
7.	Pre-Construction Meeting(s) (Section 4.2)	Prior to start of construction.
8.	Initiate Remedial Action/Implement Approved FD/RA Work Plan(s) (Section 4.2)	Within 30 days following Kerr-McGee's receipt of approval of FD/RA Work Plan(s).
9.	Monthly Progress Reports (Section 4.2)	By the 10 th day of each month.
10.	Reach-Specific Post-Construction Inspection(s) (Section 4.2)	Within 30 days following completion of construction activities at a reach or group of reaches.
11.	Post-Construction Inspection Report(s) (Section 4.2)	Within 14 days of post-construction inspection(s).
12.	Complete Remedial Action Activities	As established in approved FD/RA Work Plan(s).
13.	Pre-Certification Inspection(s) (Section 4.2)	Within 90 days after Kerr-McGee believes all work is completed and all Performance Standards are met.
14.	Final Completion Report for each Site and request for Final Certification (Section 4.3)	Within 30 days after the last pre-certification inspection for a Site.
15.	RKP Scoping and Planning Documents (Work Plan, QAPP/FSP, HASP, Emergency Contingency Plan) (Section 5.2.1)	Within 90 days after the date of Lodging of the CD.
16.	Conduct Groundwater Monitoring at RKP Site (Section 5.2.2)	As established in approved Work Plan.
17.	RKP Monthly Progress Reports (Section 5.2.3)	By the 10 th day of each month.
18.	Semi-Annual Reports of RKP Groundwater Results (Section 5.2.4)	Within 60 days after sampling event.
19.	Final RKP Groundwater Monitoring Report (Section 5.2.5)	Within 90 days after 3 consecutive trips with all wells below MCL.

Note: The above schedules are subject to change based on weather conditions (e.g., winter shutdown) and unforeseen conditions.

7.0 REFERENCES

- BBL. 2002. *Conceptual Design Report* – Kress Creek/West Branch DuPage River, DuPage County, IL.
- BBL. 2003. *Conceptual Design Report Addendum - Reach 8*. Kress Creek/West Branch DuPage River, DuPage County, IL.
- BBL. 2004a. *Remedial Investigation Report* – Kress Creek/West Branch DuPage River and Sewage Treatment Plant Sites, DuPage County, IL.
- BBL. 2004b. *Feasibility Study Report* – Kress Creek/West Branch DuPage River and Sewage Treatment Plant Sites, DuPage County, IL.
- BBL. 2005. *Conceptual Mitigation and Restoration Design Plan* – Kerr McGee Chemical LLC, Kress Creek/West Branch DuPage River and Sewage Treatment Plant Sites, DuPage County, IL.
- Kerr-McGee. 1999. *Investigation Work Plan* – Kress Creek/West Branch DuPage River Site, DuPage County, IL.
- ProSource. 2004. *Characterization Report* – Kress Creek/West Branch DuPage River Site, DuPage county, IL.
- USEPA. 1998. *Guidance for Quality Assurance Project Plans (QA/G-5)*. EPA/600/R-98/018.
- USEPA. 2001. *USEPA Requirements for Quality Assurance Project Plans (QA/R5)*. EPA/240/B-01/003.

8.0 LIST OF EXHIBITS

- Exhibit A: Conceptual Design Report – Kress CreeWWest Branch DuPage River (BBL, 2002)
- Exhibit B: Conceptual Design Report Addendum – Reach 8 – Kress Creek/West Branch DuPage River (BBL, 2003)
- Exhibit C: Excavation Verification Plan (consisting of maps and tables)